

Religious and superstitious people understand the physical world less than atheists

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Religious people have a lower understanding and interest in physics and maths than non-religious people, and often ascribe emotions to inanimate objects, shows new research.

A new study suggests that religious people, and people who believe in paranormal phenomena, have a lower understanding of the physical world compared to non-religious people.

An online questionnaire showed that people who identified themselves as religious or as believers in astrology, telepathy, or omens of bad luck, generally had lower school grades in maths and physics, and had less general knowledge of physical and biological phenomena such as evolution, gravity, energy, and astronomy.

“Many supernatural beliefs include a strange view of material and physical things: How could breaking a mirror ever bring one seven years of bad luck? How can planets affect one’s personality? How can a mind survive after death?” writes lead author Marjaana Lindeman from the Institute of Behavioural Sciences at the University of Helsinki, Finland, in an email to ScienceNordic.

“And yet the possibility that supernatural beliefs might be based on inadequate understanding of the physical world has received only minor attention in scientific studies,” she writes.

The results are [published in the journal Applied Cognitive Psychology](#) [5].

Finns were quizzed on God and science

258 people took part in an online survey in Finland, which assessed their religious beliefs, their understanding of the physical world, knowledge of certain biological and natural phenomena, and thinking styles. You can see the full list of criteria below.

Lindeman compared the responses to see how religious beliefs, or lack of them, compared with their scientific knowledge, and way of thinking and solving mechanical problems.

She discovered that people who held religious beliefs or a belief in the paranormal scored lower on several key criteria, including physics skills and scientific knowledge. They were more likely to think intuitively rather than rationally, and had a tendency to ascribe thoughts and feelings to inanimate objects like rocks, cars, water, or the wind.

Colleague: not surprised by the results

The propensity to ascribe thoughts and feelings to inanimate objects is known as “animism,” and it forms the basis of all religious thinking, says Dimitris Xygalatas, Associate Professor of Anthropology at Aarhus

University, Denmark, and Assistant Professor at the University of Connecticut. He was not involved in the new research.

“It’s not surprising that this measure was the strongest predictor of religion and spirituality, as this propensity is intrinsic to spirituality. In other words, there is some serious circularity here,” he writes in an email to ScienceNordic.

He is cautious of reading too much into the results of an online survey.

“Online surveys are cheap and easy, but they are also not very reliable,” he writes. One of the flaws is that they often do not represent the general population.

It depends on who responds to the survey. Which in this case, was around 17 per cent of those recruited, he says.

That said, the results are in line with previous studies, writes Xygalatas.

They suggest that “people who adopt spiritual world views appear to be less critical thinkers and more likely to espouse pseudo-scientific ideas or conspiracy theories,” he writes.

Our perception is designed to be efficient--not accurate

The take-home message is that supernatural beliefs persist in the face of secularization, writes Xygalatas.

“This is because they are rooted in visceral, intuitive ideas about how the world works. Such ideas might often be factually mistaken, but they’ve stayed with us throughout the course of our evolution because they often helped us survive,” he writes.

Animism was an effective evolutionary strategy and this is why it still persists today.

“It works as a “better safe than sorry” mechanism,” writes Xygalatas, and allowed our ancestors to quickly detect predators and prey, or friends and foes.

“When you mistake the noise of a falling branch for a predator, you have lost nothing other than a few heartbeats; but if you mistake a bear for a branch, that can be a very costly error,” he writes.

“It’s crucial for us to be able to detect these beings, and as a result, we are biased towards over-detecting them,” he writes.

“Our cognition and perception aren’t designed to be accurate--they’re designed to be efficient,” he writes.

Are religious people less informed on world issues?

So are religious people less informed and less able to make informed decisions in life than people who do not believe in God?

“No,” writes Lindeman.

“An individual can be well informed in one topic and less informed in others. More importantly, we did not assess believers’ knowledge and understanding widely enough to be able to make any predictions about these topics,” she writes.

But in a world that increasingly revolves around advances in technological and scientific knowledge, she

warns that citizens may find themselves unable to make reasoned judgements on key issues that draw on these topics.

Writing in the new study, Lindeman calls on other researchers to delve deeper into human reasoning to develop “theories that comprise the true breadth of supernatural beliefs and their determinants.”

 [People who hold religious beliefs or a belief in the paranormal score lower in scientific knowledge, are more likely to think intuitively rather than rationally, and often ascribe thoughts and feelings to objects like rocks or water. \(Photo: Shutterstock\) \[6\]](#)

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[Does Poor Understanding of Physical World Predict Religious and Paranormal Beliefs? DOI 10.1002/acp.3248 \[5\]](#)

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Methods

Participants were recruited via online discussion forums and student mailing lists and invited to take part in an online survey.

Out of 1,537 invitations sent, 258 completed the survey correctly.

Participants were quizzed on a range of topics to assess their practical skills, thinking style, and knowledge.

These were:

Systemizing: The ability to analyse or construct something. Participants ranked how they felt about certain statements, such as: “If there is a problem with the electrical wiring in my home I would be able to fix it myself.”

Intuitive physics skills: Skills that we use all the time, but were never taught. Participants answered 20 multiple choice questions on how certain objects work, such as where you should attach a rope to a boat in order to pull it.

Mechanical ability: Our ability to understand how things work. By looking at a line drawing of a machine, participants were asked if they could figure out how the rest of the machine moved.

A mental rotation test: Mental rotation assesses how well the brain can mentally move objects to understand what they are and how they fit in the world.

Knowledge of physical and biological phenomena: Scientists tested the participant's knowledge of scientific phenomena such as evolution, gravity, energy, and the planets. The participants also reported their school grades in physics and maths.

Mentality of objects and phenomena: This describes the participants' tendency to ascribe thoughts and feeling to inanimate objects or phenomena. Participants rated whether they considered certain objects and phenomena to think and feel emotions.

Analytical thinking ability: This was tested using a cognitive reflection test, where participants must answer three questions designed to prompt an intuitive, but incorrect, answer. They must resist this and think the problem out, in order to reach the correct answer.

Analytical thinking style: This was assessed according to set criteria that differentiate between intuitive fast-response style of thinking and a more rational slow-response style.

[Catherine Jex](#) [15]

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